

Application No. 10/541,601  
Amendment dated December 7, 2007  
Reply to Office Action of January 11, 1908

Docket No.: 0020-5397PUS1

### **AMENDMENTS TO THE DRAWINGS**

Amended Figures 51 and 52 are shown on replacement drawing sheet 47, attached in an appendix following page 15 of this document.

### **REMARKS**

Applicants thank the Examiner for the thorough consideration given the present application. Claims 1, and 3-22 are pending in the present application. Claims 1, 6, 11-13, and 21 are amended in the present application. Claim 2 is cancelled. Claims 1 and 21 are independent claims.

### **Scope of Amendments**

The present claim amendments are made only to correct issues of claim format, grammar, and clarity or to move dependent claim limitations into independent claims. None of the amendments made to the presently pending claims is intended to alter the scope or substance of the claims with respect to the present invention.

### **Drawing Objections**

The Office Action states that Figures 51 and 52 are objected to because they are not properly designated as prior art. Applicants present amended drawings with this Reply in accordance with the request that Figures 51 and 52 be clearly designated as prior art.

### **Claim Objections**

The Office Action states that claim 12 is objected to because of an improper multiple dependency in the claim preamble. Applicants have amended claim 12 to be properly dependent only from independent claim 1.

35 U.S.C. § 112 Rejections

Claims 6, 11, 13, and 16-17 stand rejected under 35 U.S.C. § 112, second paragraph, on the grounds of insufficient antecedent basis. These rejections, insofar as they pertain to the presently pending claims, are respectfully traversed.

With respect to claim 6, Applicants have amended claim 6 to now recite “a bit error rate, a frame error rate, and a packet error rate.”

With respect to claim 11, Applicants have amended claim 11 to now recite “a first reactance set” and “a second reactance set.”

With respect to claim 13, Applicants have amended claim 13 to now recite “an input impedance.” Applicants also wish to point out, however, that input impedance is an inherent, measurable quality of nearly all electronic circuits.

With respect to claims 16 and 17, Applicants respectfully point out that “plurality of reactance sets” is repeatedly recited in independent claim 1, from which both claims 16 and 17 depend. The plurality of reactance sets recited in claims 16 and 17 is the same plurality of reactance sets recited in independent claim 1.

At least in view of the above, Applicants respectfully submit that there are no antecedent basis issues remaining in the presently pending claims. Accordingly, reconsideration and withdrawal of this rejection is respectfully requested.

35 U.S.C. § 102 Rejections

Claims 1-22 stand rejected under 35 U.S.C. § 102 as being anticipated by U.S. Patent 6,407,719 to Ohira et al. (hereafter “Ohira”). Insofar as it pertains to the presently pending claims, this rejection is respectfully traversed.

With respect to independent claim 1, Ohira teaches “an array antenna apparatus having a simple configuration ... and also facilitating controlling the directivity thereof.” (Col 1. lines 39-43). Specifically, Ohira discloses a “controlling means for changing directivity of the array antenna apparatus by changing a reactance of the variable-reactance element.”

The reactance of the array antenna apparatus in Ohira is changed by changing the backward bias voltage applied to a varactor diode connected to a parasitic variable-reactance element, thereby changing the electric length of the parasitic element. (Col 4, lines 27-36). Ohira further teaches that to obtain optimum parameters, experiments were conducted using various reactances, impedances, and spacings of parasitic elements. (Table 1). Ohira does not disclose, however, the basis used for selecting the various experimental parameters, or the methods by which the parameter sets disclosed were set for the apparatus. Ohira therefore does not teach “a control device for selecting one reactance set from among a plurality of reactance sets” as required by independent claim 1 because Ohira does not teach or suggest that it is the control device itself that selects a reactance set.

Assuming, *in arguendo*, that Ohira can be read to state that the “control device” that selects a reactance set is a combination of a control device and a human operator, or that Ohira’s control device must inherently be programmed to perform this selection function (neither of which is admitted by Applicants to be a proper reading of Ohira), there is still no teaching or

suggestion in Ohira that the selection process for a reactance set is “based on the radio signal received by said array antenna, based on a signal quality of the radio signal received in each of the plurality of cases” as required by independent claim 1.

Applicants further submit that Ohira fails to teach or suggest maintaining steady input impedance in an antenna array based on a received radio signal. Applicants therefore respectfully submit that Ohira also fails to teach the limitation of setting reactance sets “so as to keep an input impedance of said array antenna substantially unchanged, based on the radio signal received by said array antenna” as required by independent claim 1.

With respect to dependent claims 3-20, Applicants respectfully submit that because of their dependency on independent claim 1, they incorporate all the language and limitations of claim 1 and that Ohira therefore has the same deficiencies in its teaching with respect to these dependent claims as it does with respect to independent claim 1.

With respect to independent claim 21, Ohira teaches an array antenna apparatus with a radiating element and at least two parasitic elements disposed in a line together with the radiating element (Fig. 6). Ohira also teaches a dielectric substrate with a grounding electrical conductor on one side of the substrate, and electrodes originating from the opposite side of the substrate protruding through the substrate and the grounding layer (Fig. 4). Ohira teaches that the radiating element and the parasitic elements all protrude in a direction perpendicular to the dielectric substrate, and that none of the radiating or parasitic elements are disposed on a substrate or a surface along their length. Applicants therefore submit that Ohira does not teach or suggest that the electrical conductors are “formed lengthwise on the first surface of said dielectric substrate” as required by independent claim 21.

With respect to dependent claim 22, Applicants respectfully submit that because of its dependency on independent claim 21, it incorporates all the language and limitations of claim 21 and that Ohira therefore has the same deficiencies in its teaching with respect to this dependent claim as it does with respect to independent claim 21.

At least in view of the above, Applicants respectfully submit that Ohira does not teach or suggest all the claimed features and limitations of the present invention. Accordingly, reconsideration and withdrawal of this rejection is respectfully requested.

Conclusion

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Michael Cammarata (Reg. No. 39,491) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

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Respectfully submitted,

By 

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